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Model State Information System Training Program. Volume VIII Installation Manual

Cincinnati Univ, Ohio Southwestern Ohio Regional Computer Ctr

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Model State Information System Training Program

Volume VIII

INSTALLATION MANUAL

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Washington, D.C.
under GSA Contract No. GS-05S-10458
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by the

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The purpose of this manual is to describe in detail the procedures that are required to install and test the Model State Information System. In addition, the minimum hardware and software requirements necessary for installation are stated.

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Purpose

The purpcse of this manual is to describe in detail the procedures that are required to install and test the Model State Information Systen (MSIS) as designed by the SouthWestern Ohio Regional Computer Center (SWORCC). In addition, the minimum hardware and scftware requirements necessary for installaticn are stated.

SWORCC has supplied a set of magnetic tapes which contain all MSIS source modules, copy mcdules, cataloqued procedures, and test case data associated with all subsystems of the MSIS. All Federal Regulaticns and Federal Standard Tables necessary to run the subsystems are alsc included.

Step by step installation procedures are provided which will facilitate preparation of the MSIS for execution. Also, a set of test case data has been prcvided as well as ccmparative repcrts to ensure that the MSIS is operating successfully.

Minimum Hardware Configuration Requirements

After two surveys had been conducted, one by American Management Systems, Inc. (AMS), and the other by the U.S. Environmental Protection Agency, Office of Water Supply, a minimum hardware configuration was developed by the SouthWestern Ohio Regional Computer Center (SWORCC) to list the requirements necessary to house the Model State Information System (MSIS). The configuration established was based upon that which was consistent with the majority of capabilities available in the States.

Mainframe

Due to processing requirements, MSIS must be implemented on a medium to large scale computer system. It is of particular advantage if the computer mainframe is an IBM 360/50 or larger, or an IBM 370/145 or larger, since MSIS was developed on an IBM-compatible AMDAHL 470V/6 under IBM's OS/VS2 operating system. Any other equivalent mainframe will involve more time to install the system due to machine incompatibilities.

Core Requirement

MSIS, once installed, becomes the property of the State or regional office using it. For installation and subsequent maintenance of the system, the computer must be able to execute an ANS COBOL compiler which consumes approximately 120K bytes, and a Linkage-Editor or Loader which consumes approximately 96 to 114K bytes of core. MSIS has been developed so that no one program exceeds 150K bytes. Assuming an average 250K byte resident operating system, in IBM standard core increments, the minimum core requirement would be 512K.

Input/Output Devices

Like most management information systems, MSIS is heavily I/O bound making use of a maximum of fourteen (14) permanent files and five (5) permanent tables. A minimum of three (3) tape drives must be available concurrently and three (3) IBM 3330 type disk packs, (one for the operating system, one for all MSIS libraries, files and tables, and one for temporary work space) must be available. Tape and disk drive requirements, however, could be altered to be more consistent with the installation's perpherial capabilities. It is highly advantageous to have more than one disk drive for MSIS files and tables so that I/O time can be spread over multiple channels rather than concentrating contention for one channel. Finally, a card reader/punch and a 132

print position line printer are necessary for successful MSIS implementation.

Summary of Minimum Hardware Configuration Requirements

Mainframe:	medium to large scale IBM System 360/50 and larger, or equivalent IBM System 370/145 and larger, or equivalent
Core Storage:	512K bytes of which 150K bytes are accessible by a user program
Tape Drives:	3 at any one time
Disk Drives:	3 at any one time: 1 for the operating system 1 for temporary work space 1 for MSIS SOURCE, COPY, PROC, and LOAD libraries, files and tables
Card Reader/Punch:	1
Line Printer:	with 132 print positions

Minimum Software Requirements

Based on the surveys performed and analyses made thereof, the computer mainframes' operating system must be equivalent to IBM's OS/MFT, OS/MVT, OS/VS1, or OS/VS2 (SVS, MVS, VM) in order to successfully implement the MSIS.

All programs of the MSIS are written in Americal National Standard COBOL. The standard of the language is American National Standard COBOL X3.23-1968, as approved by the American National Standards Institute (ANSI). It is compatible with, and identical to, international standard ISO/R 1969-1972 Programming Langauge COBOL. MSIS incorporates seven of the eight processing modules defined in the highest level of the American National Standard: Nucleus, Table Handling, Sequential Access, Random Access, Sort, Segmentation, and Library. The Report Writer processing module was not used. Any extensions peculiar to a specific vendor have been avoided to ensure machine compatibility throughout the system.

There are several stand-alone sorts as well as multiple internal COBOL sorts within the MSIS. Therefore, it is necessary to have a SORT/MERGE Utility similar to IBM's Program Product 5740-SM1 to accomplish those sorts. Operations should notify the personnel who will be in control of preparing the SORT processing options of the collating sequence of their installation. The main concern is whether or not numbers sort higher than alphabetic characters. If extended binary coded decimal (EBCDIC) characters are used, numbers sort high. Whereas, when American Standard Code for Information Interchange (ASCII) is used, numbers sort low.

Three libraries, SOURCE, COPY, and PROC must be created through the use of a standard utility program. IBM's utility program IEBUPDTE was used at SWORCC to create and maintain these libraries. Non-IBM users will need a similar utility.

In summary, the minimum software requirements are:

- OS type operating system (MFT, MVT, VS1 or VS2)
- ANSI COBOL Compiler equivalent to the ANS X3.23-1968
- SORT/MERGE Utility similar to IBM Program Product 5740-SM1
- Utility to create and maintain libraries similar to IBM's IEBUPDTE

Tape Characteristics and Content

The Model State Information System (MSIS) is distributed on two (2) magnetic tape reels. Each tape is standard label, 800 b.p.i., and contains the number of files as specified below.

1. The characteristics of tape 1 are as follows:

MODE:	EBCDIC
RECORD FORMAT:	FIXED
RECORD LENGTH:	80
BLOCK SIZE:	800
TOTAL NO. OF FILES	2

The contents of tape 1 are as follows:

File No.	DSNAME	Description
1	MSIS.SRCELIB	73 scurce modules of the MSIS. This data set is an unloaded version of a partitioned data set (PDS). Therefore, a utility program similar to IBM's IEHMOVE must be used to create this library.
2	MSIS.COPYLIB	XX COPY modules of the MSIS. This data set is an unloaded version of a partitioned data set (PDS). Therefore, a utility program similar to IBM's IEHMOVE must be used to create this library.

Tape 1, File 1, module order

ENAC010	PWSI050	WAQC025	WAQC111
ENAC020	PWSI060	WAQC031	WAQC112
ENAC030	PWSI070	WAQC032	WAQC113
ENAC040	PWSI080	WAQC033	WAQC120
FEDR010	PWSI090	WSQC034	WAQC125
FEDR020	PWSI120	WAQC035	WAQC130
MSIS010	PWSI130	WAQC036	WAQC140
MSIS020	REGS010	WAQC037	WAQC150
MSIS030	REGS020	WAQC038	WAQC170
MSIS040	SRVY010	WAQC040	WAQC180
MSIS050	SRVY020	WAQC041	WAQC200
OPER010	VAEX010	WAQC050	WAQC210
OPER020	VAEX020	WAQC051	WAQC220
OPER030	VAEX030	WAQC060	
OPER040	VAEX040	WAQC061	
OPER050	VAEX041	WAQC070	
PWSI010	VAEX050	WAQC080	
PWSI020	WAQC010	WAQC090	
PWSI030	WAQC011	WAQC100	
PWSI040	WAQC020	WAQC110	

Tape 1, File 2, module order

FDBLK133
FDBLOK80
FDCRD
FDCSF
FDDVF
FDEACHRP
FDEAF
FDEAF010
FDECHLAB
FDFLRSRT
FDFEDR10
FDLBT
FDOMF
FDOMFDRF
FDOMFML
FDOMFORF
FDPROCFL
FDPRT
FDPSF142
FDPSF146
FDPWS200
FDPWS201
FDPWS203
FDPWS204
FDPW202
FDRGF
FDSAF
FDSEF
FDSRTREC
FDSRT200
FDSSPRI
FDSSSCH
FDTMPLBT
FDTMPPOS
FDTMP144
FDVEF
FDVEFCA
FDVEFCS
FDVEFRF
FDVIF
FDVIFI
FDVIFMCL
FDWQ150
FDWQ200
FD154
FD3120
FD6708
FD6768
FD80LAE
HRDSTAT
OCOM
RECCDLAB
RECCHLAB
RECCSF
RECCVT
RECCVTOM
RECCVTRG
RECDATE
RECDET
RECDVFI
RECEAF
RECEAFCH
RECEMT
RECHSCHD
RECLBT
RECMSI
RECMSIFG
RECMSISH
RECOEF
RECOMDRF
RECOMF
RECOMFML
RECOMO
RECOMRPT
RECOMTRN
RECPHFPR
RECPHFST
RECPHFS1
RECPHFS2
RECPHOUT
RECPRCOM
RECPRC10
RECPRC30
RECPRC60
RECPROC
RECPRT
RECPRT2
RECPSF
RECPWFPR
RECPWINP
RECPW200
RECPW201
RECPW202
RECPW204
RECRESRT
RECRGF
RECRGPRC
RECRST60
RECSAF
RECSAFHR
RECSAFIL
RECSAFO
RECSAFPR
RECSAHD
RECSAPRO
RECSARD
RECSARS
RECSCHED
RECSEF
RECSEL1
RECSEL2
RECSHF
RECSHFI
RECSHFPR
RECSHFT
RECSORT
RECSRT30
RECSSPRI
RECSSSCH
RECSTVIF
RECVEF
RECVEFCA
RECVEFCS
RECVEFRF
RECVIF
RECVIFIM
RECVIFIR
RECVIFIS
RECVIHR
RECVSIT
RECVIU00
RECVIU01
RECVIU02
REGSOCOM
RTNALDEC
RTNALIGN
RTNCNVT
RTNDATED
RTNDECLR
RTNERROR
RTNFRJUL
RTNHDR
RTNLAG
RTMLBT
RTNPRINT
RTNPRT
RTNPWDEC
RTNPWT
RTNSELRP
RTNSLASH
RTNSORT
RTNSRT
RTNSTAT
RTNTOJUL
RTNWARN
SCOM
SDPSF
SDRGF
SDSAFI
SDVIF
SDVIFI
SDWKF30
SDWKF40
SDWKF50
SD144
SELEA010
SELEA020
SELEA030
SELEA040
SELFR010
SELFR020
SELMS010
SELMS020
SELMS030
SELMS040
SELMS050
SELOM010
SELOM020
SELOM030
SELOM040
SELOM050
SELPW010
SELPW020
SELPW060
SELPW070
SELPW080
SELPW090
SELPW120
SELPW130
SELPW345
SELRG010
SELRG020
SELSS010
SELSS020
SELVE010
SELVE020
SELVE030
SELVE040
SELVE041
SELVE050
SELWQ010
SELWQ011
SELWQ020
SELWQ025
SELWQ031
SELWQ032
SELWQ033
SELWQ034
SELWQ035
SELWQ036
SELWQ037
SELWQ038
SELWQ040
SELWQ041
SELWQ050
SELWQ051
SELWQ060
SELWQ061
SELWQ070
SELWQ080
SELWQ090
SELWQ100
SELWQ110
SELWQ111
SELWQ112
SELWQ113
SELWQ120
SELWQ125
SELWQ130
SELWQ140
SELWQ150
SELWQ170
SELWQ180
SELWQ200
SELWQ210
SELWQ220
SPNM
WSALIGN
WSALNDEC
WSBINBY

WSCNVRT
WSCNVT
WSCTR30
WSCVTPWS
WSDATED
WSDETAR
WSERROR
WSERRREC
WSFLTTL
WSHDARY
WSHDR
WSHDRVAL
WSHDR30
WSJUL
WSLAG
WSLET
WSPHONE
WSPRCERR
WSPRINT
WSPRT
WSPWFAB
WSPWFWK
WSPWT
WSRECDET
WSRSTERR
WSSELERR
WSSELFF
WSSELTAB
WSSKYBS
WSSLASH
WSSORT
WSSRT
WSSRTERR
WSSRTKY
WSSS030
WSSW03C
WSSW060
WSTRKCAP
WSTRKPWT
WSWARN
WS9TOX

2. The characteristics of tape 2 are as follows:

MODE:	EBCDIC
RECORD FORMAT:	FIXED
RECORD LENGTH:	See Below
BLOCK SIZE:	See Below
TOTAL NO. OF FILES	19

The contents of tape 2 are as follows:

File No.	DSNAME	LRECL/ BLKSIZE	DESCRIPTION
1	MSIS.PROCLIB	80/800	31 catalogued procedures and 24 SORT control card datasets of the MSIS. This dataset is an unloaded version of a partitioned dataset (PDS). Therefore, a utility program similar to IBM's IEHMOVE must be used to create this library.
2	MSIS.EMCVDE.DATA	80/3120	Permanent and Test Input data to module MSIS03C for creation of the Error Message Table (EMT), Code Value Tables (CVT), and Data Element Tables (DET).
3	MSIS.REGSTST.DATA	80/3120	Test Input data to module REGS010 for creation of the Regulations File (RGF). (Contains dummy State regulations.)
4	MSIS.FPREGS.DATA	80/3120	Permanent Input data to module REGS010 for creation of the Federal Primary (FP) Regulations. State Primary (SP) Regulations must be appended to this file for successful

			creation of the complete Regulations File (RGF).
5	MSIS.LBT.DATA	80/3120	Test Input data to module WAQC210 for creation of the Laboratory Table (LBT).
6	MSIS.PWF1.DATA	80/3120	Test Input data to module PWSI010, pass 1, for creation of the Public Water File (PWF).
7	MSIS.PWF2.DATA	80/3120	Test Input data to module PWSI010, pass 2, for update of the PWF.
8	MSIS.VEF1.DATA	80/3120	Test Input data to module VAEX010, pass 1, for creation of the Variances and Exemptions File (VEF).
9	MSIS.VEF2.DATA	80/3120	Test Input data to module VAEX010, pass 2, for update of the VEF.

10	MSIS.EAF1.DATA	80/3120	Test Input data to module ENAC010, pass 1, for creation of the Enforcement Actions File (EAF).
11	MSIS.EAF2.DATA	80/3120	Test Input data to module ENAC010, pass 2, for update of the EAF.
12	MSIS.OMF1.DATA	80/3120	Test Input data to module OPER010, pass 1, for creation of the Operator and Mailing File (OMF).
13	MSIS.OMF2.DATA	80/3120	Test Input data to module OPER010, pass 2, for update of the OMF.
14	MSIS.PSF1.DATA	80/3120	Test Input data to module WAQC010, pass 1, for creation of the Periodic Sample File (PSF).
15	MSIS.PSF2.DATA	80/3120	Test Input data to module WAQC010, pass 2, for update of the PSF.
16	MSIS.VIF1.DATA	80/3120	Test Input data to module WAQC120, pass 1, for creation of the Violations File (VIF).
17	MSIS.VIF2.DATA	80/3120	Test Input data to module WAQC120, pass 2, for update of the VIF.

18	MSIS.SCHED.DATA	80/3120	Test Input data to module WAQC130 for scheduling cf sample analyses.
19	MSIS.NATINV.DATA	900/2700	Test Input data to module PWSI120 for conversion of a simulated National Inventory File to MSIS format.

Tape 2, File 1, module order (MSIS.PROCLIB)

ENACSELT	SORT13
ENACUPDT	SORT14
FEDREPT	SORT15
MSISCRET	SORT16
MSISPURG	SORT17
MSISSELT	SORT18
OPERSELT	SORT19
OPERUPDT	SORT20
PWSICONV	SORT21
PWSIPHPP	SORT22
PWSIPWTC	SRVYREPT
PWSISELH	VAEXSELT
PWSISELT	VAEXUPDT
PWSIUPD1	WAQCCOM1
PWSIUPD2	WAQCCOM2
REGSCRET	WAQCCOM3
REGSREPT	WAQCCOM4
SORT01	WAQCLBTC
SORT02	WAQCPSFU
SORT03	WAQCSAFD
SORT04	WAQCSAPP
SORT05	WAQCSAFS
SORT06	
SORT07	
SORT08	
SORT09	
SORT10	
SORT11	
SORT12	

Tape 2, File 2 through File 19

See Appendix D for listings of each of these files of input data.

Installation Procedure

A. Requirements

1. The MSIS Installation tapes.
2. The following processors:
   - IEHMOVE, IEBUPDTE, and IEBPTPCH - Utilities
   - IKFCBL00 - ANS COBOL Compiler
   - IEWL - Linkage Editor
3. Space available in the target libraries as follows:

Library Name	Minimum # of Tracks	Recommended # of Directory Blocks
XX.MSIS.SRCELIB	950	25
XX.MSIS.COPYLIB	57	95
XX.MSIS.PROCLIB	36	20
XX.MSIS.LOADLIB		

Where XX = the two letter postal state abbreviation of your state. Example: OH for Ohio

B. Procedure

1. Unload the SOURCE, COPY, and PROC libraries using IEHMOVE.
2. Punch files 2 through 18 from tape 2 using IEBPTPCH. If desired, these files may be placed on disk in lieu of punching cards.
3. List the COPY and PROC libraries using IEBPTPCH.
4. Make necessary modifications to the COPY and PROC libraries using IEBUPDTE.

   Examples of changes that may be necessary to the COPY library are as follows:

   a. the clauses that are contained within the file description copies. This would encompass each copy that begins with the letters FD.
   b. the source computer copy which is named SCOM.
   c. the clauses that are contained within the sort description copies. This would encompass each copy that begins with the letters SD.
   d. the select statement copies which begin with the letters SEL.
   e. the object computer paragraph copies which are named OCOM and REGSOCOM.
   f. the special names paragraph copy which is named SPNM.
   g. the number of Laboratory Table records that can be stored per track of disk

space. This value is initially set to 70 in the copy which is named WSTRKCAP.

h. the number of Public Water Table records that can be stored per track of disk space. This value is initially set to 39 in the copy which is named WSTRKPWT.

Examples of changes that may be necessary to the PROC library are as follows:

a. the symbolic reference to the first qualifier of all dataset names.
Example: STATE='TESTSTAT.'

b. the symbolic reference to the dataset name where the MSIS LOAD module programs will be stored.
Example: LOADLIB='ADP.SUPERLIB'

c. the symbolic reference to the unit specification necessary for work space.
Example: WKUNIT='WORK1'

5. Compile and Link-edit SOURCE library programs storing the resultant LOAD module in the LOAD library. Repeat steps 4 and 5 as necessary until all programs have been successfully compiled and link-edited to the LOAD library.

6. Run the Test Case (See Appendix E).

Example of IEHMOVE

```
//LOAD     JOB NUMBER,NAME
//STEP1    EXEC PGM=IEHMOVE
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  UNIT=3330,VOL=SER=WRK150,SPACE=(10,10)),DISP=OLD
//DD1      DD  UNIT=3330,VOL=SER=USER01,DISP=OLD
//TAPE1    DD  UNIT=2400,VOL=SER=OS1111,DISP=OLD,
//             LABEL=(,SL),DCB=DEN=3
//SYSIN    DD  *
   COPY PDS=MSIS.SRCELIB,FROM=2400=(OS1111,1),
                TO=3330=USER01,FROMDD=TAPE1,
                TODD=DD1,RENAME=XX.MSIS.SRCELIB
/*
```

Example of IEBPTPCH

```
//PRINT    JOB NUMBER,NAME
//STEP1    EXEC PGM=IEBPTPCH
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSNAME=XX.MSIS.PROCLIB,DISP=SHR
//SYSUT2   DD  SYSOUT=A
//SYSIN    DD  *
   PRINT MAXFLDS=1,TYPORG=PO
   RECORD FIELD=(80,1,,5)
/*
```

Example of IEBUPDTE

```
//UPDATE   JOB NUMBER,NAME
//STEP1    EXEC PGM=IEBUPDTE,
//              PARM=MOD
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSNAME=XX.MSIS.COPYLIB,DISP=OLD
//SUSUT2   DD  DSNAME=XX.MSIS.COPYLIB,DISP=OLD
//SYSIN    DD  *
./ CHANGE NAME=COPYMEM,LIST=ALL,LEVEL=01,SOURCE=0
./ NUMBER SEQ1=15,NEW1=20,INCR=5,INSERT=YES
(DATA STATEMENT 1)
(DATA STATEMENT 2)
(DATA STATEMENT 3)
./ ENDUP
/*
```

Appendices

Appendix - MSIS.SRCELIB Module Descriptions

All library members are arranged in program number order within subsystem according to the following sequence.

Public Water System Inventory (PWSI)
Regulations (REGS)
Water Quality Compliance (WAQC)
Federal Reporting (FEDR)
Standard Processing (MSIS)
Variances and Exemptions (VAEX)
Enforcement Actions (ENAC)
Sanitary Survey (SRVY)
Operator and Mailing (OPER)

SOURCE Library Contents

Name: PWSI010 Number of Lines: 9898
Description: Public Water File Data Entry & Update

Name: PWSI020 Number of Lines: 5467
Description: Public Water File Selection

Name: PWSI030 Number of Lines: 4029
Description: Condensed Report

Name: PWSI040 Number of Lines: 4114
Description: Production Data Report

Name: PWSI050 Number of Lines: 4788
Description: State Discretionary Data Report

Name: PWSI060 Number of Lines: 7659
Description: Comprehensive Report

Name: PWSI070 Number of Lines: 2050
Description: Public History File Maintenance

Name: PWSI080 Number of Lines: 1923
Description: Public History File Selection

Name: PWSI090 Number of Lines: 1271
Description: Public History File Purge

Name: PWSI120 Number of Lines: 1538
Description: Convert National Inventory

Name: PWSI130 Number of Lines: 1011
Description: Public Water Table Creation

Name: REGS010 Number of Lines: 7804
Description: Regulations File Creation

Name: REGS020 Number of Lines: 4148
Description: Regulations File Report

Name: WAQC010 Number of Lines: 5141
Description: Periodic Sample File Data Entry & Update

Name: WAQC011 Number of Lines: 2350
Description: Periodic Sample File Transaction Report

Name: WAQC020 Number of Lines: 1366
Description: Sample Analysis File Update

Name: WAQC025 Number of Lines: 1042
Description: Compliance Files Creation

Name: WAQC031 Number of Lines: 3153
Description: Edit for Turbidity Violations

Name: WAQC032 Number of Lines: 6277
Description: Edit for Inorganic Violations

Name: WAQC033 Number of Lines: 6115
Description: Edit for Organic Violations

Name: WAQC034 Number of Lines: 4376
Description: Edit for Bacteriological Violations

Name: WAQC035 Number of Lines: 5767
Description: Edit for Gross Alpha Violations

Name: WAQC036 Number of Lines: 8030
Description: Edit for Gross Beta Violations

Name: WAQC037 Number of Lines: 769
Description: Operation Report Violations

Name: WAQC038 Number of Lines: 1030
Description: Merge Compliance Files

Name: WAQC040 Number of Lines: 2039
Description: Chemical MCL Violations Report

Name: WAQC041 Number of Lines: 2032
Description: Radiological MCL Violations Report

Name: WAQC050 Number of Lines: 2033
Description: Bacteriological MCL Violations Report

Name: WAQC051 Number of Lines: 2033
Description: Turbidity MCL Violations Report

Name: WAQC060 Number of Lines: 2104
Description: Chemical Sampling Violations Report

Name: WAQC061 Number of Lines: 2104
Description: Radiological Sampling Violations Report

Name: WAQC070 Number of Lines: 2110
Description: Bacteriological MCL Violations Report

Name: WAQC080 Number of Lines: 2110
Description: Turbidity Sampling Violations Report

Name: WAQC090 Number of Lines: 1785
Description: Late Monthly Operations Report

Name: WAQC100 Number of Lines: 4397
Description: Sample Analysis File Selection

Name: WAQC110 Number of Lines: 3380
Description: Chemical Analysis Summary Report

Name: WAQC111 Number of Lines: 3380
Description: Radiological Analysis Summary Report

Name: WAQC112 Number of Lines: 3453
Description: Bacteriological Analysis Summary Report

Name: WAQC113 Number of Lines: 3417
Description: Turbidity Analysis Summary Report

Name: WAQC120 Number of Lines: 3955
Description: Violations File Data Entry & Update

Name: WAQC125 Number of Lines: 4009
Description: Violations File Selection

Name: WAQC130 Number of Lines: 4148
Description: Sample Scheduling

Name: WAQC140 Number of Lines: 1129
Description: Chemical & Radiological Schedule Report

Name: WAQC150 Number of Lines: 1180
Description: Chemical & Radiological Analysis Report Form

Name: WAQC170 Number of Lines: 1050
Description: Turbidity & Bacteriological Analysis Report Form

Name: WAQC180 Number of Lines: 902
Description: Turbidity & Bacteriological Analysis Summary Form

Name: WAQC200 Number of Lines: 732
Description: Mailing Labels & Operations Report Forms

Name: WAQC210 Number of Lines: 1933
Description: Laboratory Table Creation

Name: WAQC220 Number of Lines: 1273
Description: Sample Analysis File Purge

Name: FEDR010 Number of Lines: 1458
Description: Create Modified Public Water File

Name: FEDR020 Number of Lines: 759
Description: Create Deviations File

Name: MSIS010 Number of Lines: 1142
Description: Standard Error Processing

Name: MSIS020 Number of Lines: 1597
Description: Standard History File Maintenance

Name: MSIS030 Number of Lines: 2075
Description: Standard Tables Creation

Name: MSIS040 Number of Lines: 3297
Description: Standard History File Selection

Name: MSIS050 Number of Lines: 1495
Description: Standard History File Purge

Name: VAEX010 Number of Lines: 4494
Description: Variances & Exemptions Data Entry & Update

Name: VAEX020 Number of Lines: 888
Description: Compliance Schedule Report

Name: VAEX030 Number of Lines: 1060
Description: Compliance Schedule in Arrears Report

Name: VAEX040 Number of Lines: 4147
Description: Variances & Exemptions File Selection

Name: VAEX041 Number of Lines: 900
Description: Condensed Report

Name: VAEX050 Number of Lines: 1137
Description: Case History Report

Name: ENAC010 Number of Lines: 3645
Descriptoin: Enforcement Actions File Data Entry & Update

Name: ENAC020 Number of Lines: 3497
Descriptiсn: Enforcement Actions File Selection

Name: ENAC030 Number of Lines: 1717
Description: Case History Report

Name: ENAC040 Number of Lines: 787
Descriptiсn: Condensed Report

Name: SRVY010 Number of Lines: 2704
Description: Survey Scheduling

Name: SRVY020 Number of Lines: 1505
Description: Schedule Report

Name: OPER010 Number of Lines: 2641
Description: Operator & Mailing File Data Entry & Update

Name: OPER020 Number of Lines: 3145
Description: Operator & Mailing File Selection

Name: OPER030 Number of Lines: 775
Description: Operator Report

Name: OPER040 Number of Lines: 468
Description: Distribution Report

Name: OPER050 Number of Lines: 285
Description: Mailing Labels

Appendix - MSIS.COPYLIB Module Descriptions

The library members have certain naming conventions which were maintained during development of MSIS. A member name can have a maximum length of eight (8) characters. SWORCC has developed a prefix format in the following manner:

FD for all file descriptions;
REC for all record definitions;
RTN for all procedure division subroutines;
SD for all sort file descriptions;
SEL for all select statements from a program module;
WS for all working storage data.

All library members are arranged alphabetically.

COPY Library Contents

SEL for all SELECT and ASSIGN statements from a program module;
WS for all working storage data.

All COPY members are arranged alphabetically within the library at installation and can be found similarly in the following list of its contents:

COPY Library Contents

Name: FDBLK133 Number of Lines: 3
Used by Program(s): REGS010
Description: FD for print record of 133 characters

Name: FDBLOK80 Number of Lines: 3
Used by Program(s): WAQC210
Description: FD for 80 character record with standard labels

Name: FDCRD Number of Lines: 3
Used by Program(s): ENAC010 FEDR010 MSIS030 MSIS050 PWSI010
PWSI030 PWSI040 PWSI050 PWSI090 PWSI120
PWSI130 REGS020 SRVY020 VAEX010 WAQC011
WAQC020 WAQC025 WAQC040 WAQC041 WAQC050
WAQC051 WAQC120 WAQC130 WAQC150 WAQC170
WAQC180 WAQC220
Description: FD for Standard Card File

Name: FDCSF Number of Lines: 3
Used by Program(s): WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
WAQC036 WAQC130
Description: FD for Compliance Status File

Name: FDDVF Number of Lines: 3
Used by Program(s): FEDR020
Description: FD for Deviations File (DVF)

Name: FDEACHRP Number of Lines: 4
Used by Program(s): ENAC020 ENAC030 ENAC040
Description: FD for Enforcement Actions Case History Report

Name: FDEAF Number of Lines: 4
Used by Program(s): ENAC020
Description: FD for Enforcement Actions File (EAF)

Name: FDEAF010 Number of Lines: 3
Used by Program(s): ENAC010
Description: FD for Enforcement Actions Master File

Name: FDECHLAB Number of Lines: 3
Used by Program(s): ENAC010
Description: FD for Enforcement Actions Case History File

Name: FDFDRSRT Number of Lines: 1
Used by Program(s): FEDR020
Description: FEDR Sorted File

Name: FDFEDR10 Number of Lines: 3
Used by Program(s): FEDR010 FEDR020
Description: FD for data file

Name: FDLBT Number of Lines: 2
Used by Program(s): PWSI010 WAQC010 WAQC032 WAQC033 WAQC034
WAQC035 WAQC036 WAQC120 WAQC210
Description: FD for Lab Table (LBT)

Name: FDOMF Number of Lines: 3
Used by program(s): OPER010 OPER020
Description: FD for Operator & Mailing File (OMF)

Name: FDOMFDRF Number of Lines: 3
Used by Program(s): OPER010 OPER020 OPER040
Description: FD for Operator and Mailing DRF

Name: FDOMFML Number of Lines: 3
Used by Program(s): OPER020 OPER050
Description: FD for Mailing Label File

Name: FDOMFORF Number of Lines: 3
Used by Program(s): OPER010 OPER020 OPER030
Description: FD for Operator & Mailing Report

Name: FDPROCFL Number of Lines: 2
Used by Program(s): WAQC010 OPER010
Description: FD for PROC files

```
Name: FDPRT          Number of Lines: 3
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
                    MSIS050 OPER010 OPER020 OPER030 OPER040
                    OPER050 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
                    PWSI120 PWSI130 REGS020 SRVY010 SRVY020
                    VAEX010 VAEX020 VAEX030 VAEX040 VAEX041
                    VAEX050 WAQC010 WAQC011 WAQC020 WAQC025
                    WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC038 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
                    WAQC090 WAQC100 WAQC110 WAQC111 WAQC112
                    WAQC113 WAQC120 WAQC125 WAQC130 WAQC140
                    WAQC150 WAQC170 WAQC180 WAQC200 WAQC210
                    WAQC220
Description: FD for 133 character print record

Name: FDPSF142       Number of Lines: 3
Used by Program(s): WAQC010 WAQC011 WAQC031 WAQC032 WAQC033
                    WAQC034 WAQC035 WAQC036 WAQC038
Description: FD for Periodic Sampling - Type File

Name: FDPSF146       Number of Lines: 3
Used by Program(s): WAQC010
Description: FD for Periodic Sample File (PSF)

Name: FDPWS200       Number of Lines: 3
Used by Program(s): FEDR010 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI130 SRVY010 SRVY020
                    WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC037 WAQC130
Description: FD for Public Water Files (PWF)

Name: FDPWS201       Number of Lines: 2
Used by Program(s): ENAC010 ENAC030 OPER010 PWSI130 VAEX010
                    VAEX040 WAQC010 WAQC100 WAQC120 WAQC125
Description: FD for Public Water Table (PWT)

Name: FDPWS203       Number of Lines: 3
Used by Program(s): PWSI120
Description: FD for National Public Water File

Name: FDPWS204       Number of Lines: 3
Used by Program(s): PWSI010 PWSI120
Description: FD for Public Water File transactions

Name: FDPW202        Number of Lines: 3
Used by Program(s): PWSI010 PWSI070 PWSI080 PWSI090
Description: FD for Public History File (PHF)
```

```
Name: FDRGF          Number of Lines: 3
Used by Program(s): REGS010 REGS020 WAQC031 WAQC032 WAQC033
                    WAQC034 WAQC035 WAQC036 WAQC130
Description: FD for Regulations File (RGF)

Name: FDSAF          Number of Lines: 3
Used by Program(s): WAQC020 WAQC025 WAQC031 WAQC032 WAQC033
                    WAQC034 WAQC035 WAQC036 WAQC037 WAQC038
                    WAQC100 WAQC110 WAQC111 WAQC112 WAQC113
                    WAQC220
Description: FD for Sample Analysis File (SAF)

Name: FDSEF          Number of Lines: 3
Used by Program(s): ENAC010 MSIS010 MSIS020 OPER010 PWSI010
                    PWSI070 REGS010 VAEX010 WAQC010 WAQC020
                    WAQC120 WAQC210
Description: FD for Standard Error File (SEF)

Name: FDSRTREC       Number of Lines: 1
Used by Program(s): MSIS040
Description: Sort file of 110 position record

Name: FDSRT200       Number of Lines: 1
Used by Program(s): PWSI060
Description: Sort record for PWF

Name: FDSSPRI        Number of Lines: 3
Used by Program(s): SRVY010 SRVY020
Description: FD for SRVY Priority Report File

Name: FDSSSCH        Number of Lines: 3
Used by Program(s): SRVY010
Description: FD for Sanitary Sruvey Schedule File

Name: FDTMPLBT       Number of Lines: 3
Used by Program(s): WAQC210
Description: FD for Lab Table (LBT)

Name: FDTMPPOS       Number of Lines: 3
Used by Program(s): REGS010 MSIS040
Description: FD for REGS010   POS file

Name: FDTMP144       Number of Lines: 3
Used by Program(s): PWSI080
Description: FD for temporary data set of selected records

Name: FDVEF          Number of Lines: 3
Used by Program(s): FEDR020 VAEX010 VAEX040
Description: FD for Variances & Exemptions File (VEF)
```

Name: FDVEFCA Number of Lines: 3
Used by Program(s): VAEX030
Description: FD for Variances & Exemptions Compliance in Arrears File

Name: FDVEFCS Number of Lines: 3
Used by Program(s): VAEX020
Description: FD for Variances & Exemptions Compliance Schedule File

Name: FDVEFRF Number of Lines: 3
Used by Program(s): VAEX040 VAEX041 VAEX050
Description: FD for Variances & Exemptions Report File

Name: FDVIF Number of Lines: 3
Used by Program(s): FEDR020 SRVY010 WAQC120 WAQC125
Description: FD for Violations File (VIF)

Name: FDVIFI Number of Lines: 3
Used by Program(s): WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
WAQC061 WAQC070 WAQC080 WAQC090
Description: FD for VIFI file

Name: FDVIFMCL Number of Lines: 3
Used by Program(s): WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
WAQC036
Description: FD for Violations of MCL Reports

Name: FDWQ150 Number of Lines: 3
Used by Program(s): WAQC130
Description: FD for WAQC130

Name: FDWQ200 Number of Lines: 3
Used by Program(s): WAQC130 WAQC200
Description: FD for WAQC130 & WAQC200

Name: FD154 Number of Lines: 3
Used by Program(s): WAQC140 WAQC150 WAQC170 WAQC180
Description: FD for WAQC150, 140, 170, 180

Name: FD3120 Number of Lines: 3
Used by Program(s): REGS010
Description: FD for 80 byte record, blocked 39

Name: FD6708 Number of Lines: 3
Used by Program(s): VAEX010
Description: FD for 662 to 3348 variable length record

Name: FD6768 Number of Lines: 3
Used by Program(s): VAEX010
Description: FD for 678 to 3378 variable length record

```
Name: FD80LAB      Number of Lines: 3
Used by Program(s): ENAC010 ENAC020 ENAC030 FEDR010 MSIS010
                    MSIS020 MSIS030 MSIS040 MSIS050 OPER010
                    OPER020 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI120
                    SRVY010 VAEX010 VAEX040 WAQC010 WAQC011
                    WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC037 WAQC038 WAQC040 WAQC041
                    WAQC050 WAQC051 WAQC060 WAQC061 WAQC070
                    WAQC080 WAQC090 WAQC100 WAQC110 WAQC111
                    WAQC112 WAQC113 WAQC120 WAQC125 WAQC130
                    WAQC210
Description: FD for table records, 80 characters

Name: HDRSTAT      Number of Lines: 134
Used by Program(s): ENAC010 MSIS020 MSIS030 MSIS050 OPER010
                    PWSI070 REGS010 VAEX010 WAQC010 WAQC020
                    WAQC120
Description: Working storage Standard Statistics Report

Name: OCOM         Number of Lines: 1
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
                    MSIS050 OPER010 OPER020 OPER030 OPER040
                    OPER050 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
                    PWSI120 PWSI130 REGS020 SRVY010 SRVY020
                    VAEX010 VAEX020 VAEX030 VAEX040 VAEX041
                    VAEX050 WAQC010 WAQC011 WAQC020 WAQC025
                    WAQC031 WAQC034 WAQC035 WAQC036 WAQC037
                    WAQC038 WAQC040 WAQC041 WAQC050 WAQC051
                    WAQC060 WAQC061 WAQC070 WAQC080 WAQC090
                    WAQC100 WAQC110 WAQC111 WAQC112 WAQC113
                    WAQC120 WAQC125 WAQC130 WAQC140 WAQC150
                    WAQC170 WAQC180 WAQC200 WAQC210 WAQC220
Description: Object Computer name

Name: RECCDLAB     Number of Lines: 13
Used by Program(s): WAQC130 WAQC200
Description: Record layout for WAQC200

Name: RECCHLAB     Number of Lines: 5
Used by Program(s): WAQC130 WAQC200
Description: Record layout for WAQC200

Name: RECCSF       Number of Lines: 31
Used by Program(s): WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC130
Description: Record layout for Compliance Status File
```

```
Name: RECCVT        Number of Lines: 14
Used by Program(s): ENAC010 ENAC030 FEDR010 MSIS030 OPER010
                    PWSI120 REGS010 SRVY010 VAEX010 WAQC010
                    WAQC032 WAQC033 WAQC036 WAQC100 WAQC120
                    WAQC130 WAQC210
Description: Record description of Code Value Table (CVT)

Name: RECCVTOM      Number of Lines: 14
Used by Program(s): OPER010
Description: Record description of Code Value Table (CVT) for
             Operator & Mailing

Name: RECCVTRG      Number of Lines: 14
Used by Program(s): REGS010 ENAC030
Description: Record description of Code Value Table (CVT) for
             Regulations

Name: RECDATE       Number of Lines: 7
Used by Program(s): FEDR010 FEDR020
Description: Record description of Deviations File (DVF) date record.

Name: RECDET        Number of Lines: 27
Used by Program(s): ENAC020 MSIS010 MSIS030 OPER020 PWSI020
                    PWSI030 PWSI040 PWSIC50 PWSI060 SRVY010
                    VAEX040 WAQC011 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
                    WAQC090 WAQC100 WAQC110 WAQC111 WAQC112
                    WAQC113 WAQC125
Description: Record description of Data Element Table (DET)

Name: RECDVFI       Number of Lines: 8
Used by Program(s): FEDR010
Description: Record description of Deviations File PROC record

Name: RECEAF        Number of Lines: 36
Used by Program(s): ENAC010 ENAC020
Description: Record description of Enforcement Action File (EAF)

Name: RECEAFCH      Number of Lines: 50
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040
Description: PROC and output record for EAF Case History
             Report File

Name: RECEMT        Number of Lines: 12
Used by Program(s): MSIS010 MSIS030
Description: Record description of Error Message Table (EMT)

Name: RECHSCHD      Number of Lines: 10
Used by Program(s): WAQC130 WAQC140 WAQC150 WAQC170 WAQC180
Description: Record layout for Sample Analysis Scheduling
             File
```

```
Name: RECLBT        Number of Lines: 20
Used by Program(s): PWSI010 WAQC010 WAQC032 WAQC033 WAQC034
                    WAQC035 WAQC036 WAQC120 WAQC210
Description: Record description of Lab Table (LBT)

Name: RECMSI        Number of Lines: 4
Used by Program(s): MSIS030
Description: Record description of PROC card

Name: RECMSIPG      Number of Lines: 6
Used by Program(s): MSIS050
Description: Record description of PROC card for MSIS050

Name: RECMSISH      Number of Lines: 9
Used by Program(s): MSIS020 OPER010
Description: Record description of PROC card for MSIS020

Name: RECOEF        Number of Lines: 4
Used by Program(s): MSIS010
Description: Record description of Optional Error File

Name: RECOMDRF      Number of Lines: 23
Used by Program(s): OPER010 OPER020 OPER040
Description: Record description of Operator and Mailing
             Distribution Report File

Name: RECOMF        Number of Lines: 19
Used by Program(s): OPER010 OPER020
Description: Record description of Operator & Mailing File (OMF)

Name: RECOMFML      Number of Lines: 12
Used by Program(s): OPER020 OPER050
Description: Record description of Operator and Mailing
             Label File

Name: RECOMO        Number of Lines: 19
Used by Program(s): OPER010
Description: Record description of operator and Mailing
             File (OMF)

Name: RECOMRPT      Number of Lines: 28
Used by Program(s): OPER010 OPER020 OPER030
Description: Record description of Operator & Mailing Report

Name: RECOMTRN      Number of Lines: 31
Used by Program(s): OPER010
Description: Record description of Operator and Mailing
             Transactions
```

Name: RECPHPPR Number of Lines: 4
Used by Program(s): PWSI080
Description: Record description of Public History PROC

Name: RECPHPST Number of Lines: 7
Used by Program(s): PWSI070 PWSI080
Description: Record description of Public History SORT

Name: RECPHPS1 Number of Lines: 6
Used by Program(s): PWSI080
Description: Record description of Public History SEL1

Name: RECPHPS2 Number of Lines: 5
Used by Program(s): PWSI080
Description: Record description of Public History SEL2

Name: RECPHOUT Number of Lines: 11
Used by Program(s): PWSI010 PWSI070 PWSI080 PWSI090
Description: Record description of Public History File
(PHF)

Name: RECPRCOM Number of Lines: 7
Used by Program(s): OPER010
Description: Record description of PROC for OPER010

Name: RECPRC10 Number of Lines: 12
Used by Program(s): PWSI010
Description: PROC for SEF data entry and update

Name: RECPRC30 Number of Lines: 10
Used by Program(s): PWSI030 PWSI040 PWSI050
Description: Record description of PROC for PWSI030-50

Name: RECPRC60 Number of Lines: 11
Used by Program(s): PWSI010 PWSI060 SRVY020
Description: Record description of PROC for PWSI060

Name: RECPROC Number of Lines: 4
Used by Program(s): MSIS040
Description: Record description of general PROC record

Name: RECPRT Number of Lines: 3
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
MSIS050 OPER010 OPER020 OPER030 OPER040
OPER050 PWSI010 PWSI020 PWSI030 PWSI040
PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
PWSI120 PWSI130 REGS010 REGS020 SRVY010
SRVY020 VAEX010 VAEX020 VAEX030 VAEX040
VAEX041 VAEX050 WAQC010 WAQC011 WAQC020
WAQC025 WAQC031 WAQC032 WAQC033 WAQC034
WAQC035 WAQC036 WAQC038 WAQC040 WAQC041
WAQC050 WAQC051 WAQC060 WAQC061 WAQC070
WAQC080 WAQC090 WAQC100 WAQC110 WAQC111
WAQC112 WAQC113 WAQC120 WAQC125 WAQC130
WAQC140 WAQC150 WAQC170 WAQC180 WAQC200
WAQC210 WAQC220
Description: Record description of general print line

Name: RECPRT2 Number of Lines: 3
Used by Program(s): PWSI060 PWSI080 MSIS040
Description: Record description of gereral print line

Name: RECPSF Number of Lines: 52
Used by Program(s): WAQC010 WAQC031 WAQC032 WAQC033 WAQC034
WAQC035 WAQC036
Description: Record description of Periodic Sample File (PSF)

Name: RECPWFPR Number of Lines: 4
Used by Program(s): PWSI130
Description: PRCC date for PWSI

Name: RECPWINP Number of Lines: 146
Used by Program(s): PWSI020
Description: Record description of Public Water File (PWF)

Name: RECPW200 Number of Lines: 145
Used by Program(s): FEDR010 PWSI010 PWSI020 PWSI030 PWSI040
PWSI050 PWSI060 PWSI130 SRVY010 SRVY020
WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
WAQC036 WAQC037 WAQC130
Description: Record description of Public Water File (PWF)

Name: RECPW201 Number of Lines: 24
Used by Program(s): ENAC010 ENAC030 OPER010 PWSI030 VAEX010
VAEX040 WAQC010 WAQC100 WAQC120 WAQC125
Description: Record description of Public Water Table
and header record

Name: RECPW202 Number of Lines: 11
Used by Program(s): PWSI090
Description: Record description of Public History File as input

Name: RECPW204 Number of Lines: 196
Used by Program(s): PWSI010 PWSI120 VAEX010
Description: Record descriptions of Public Water File transactions

Name: RECRESRT Number of Lines: 4
Used by Program(s): WAQC150 WAQC170 WAQC180
Description: RESTART record for SAF

Name: RECRGF Number of Lines: 203
Used by Program(s): REGS010 REGS020 WAQC031 WAQC032 WAQC033 WAQC034 WAQC035 WAQC036 WAQC130
Description: Record description of Regulations File (RGF)

Name: RECRGPRC Number of Lines: 4
Used by Program(s): REGS020
Description: PROC for RGF

Name: RECRST60 Number of Lines: 4
Used by Program(s): PWSI060
Description: RESTART record for PWF

Name: RECSAF Number of Lines: 72
Used by Program(s): WAQC020 WAQC025 WAQC031 WAQC032 WAQC033 WAQC034 WAQC035 WAQC036 WAQC100 WAQC220
Description: Record description of Sample Analysis File (SAF)

Name: RECSAFHR Number of Lines: 11
Used by Program(s): WAQC037 WAQC038
Description: PROC for RGF

Name: RECSAFIL Number of Lines: 2
Used by Program(s): WAQC025
Description: Record layout for filler equal in lenght to SAF

Name: RECSAFO Number of Lines: 1
Used by Program(s): WAQC020
Description: Record description of Sample Analysis File as output

Name: RECSAFPR Number of Lines: 11
Used by Program(s): WAQC025
Description: PROC record for SAF

Name: RECSAHD Number of Lines: 8
Used by Program(s): WAQC100 WAQC110 WAQC111 WAQC112 WAQC113
Description: Record description of Report Header for Sample Analysis File (SAF)

Name: RECSAPRO Number of Lines: 6
Used by Program(s): WAQC020
Description: Record Description of PROC record for Sample Analysis File

Name: RECSARD Number of Lines: 48
Used by Program(s): WAQC100 WAQC110 WAQC111
Description: Record description of Chem/Radio Analysis Select File

Name: RECSARS Number of Lines: 54
Used by Program(s): WAQC100 WAQC112 WAQC113
Description: Record layout for Bact/Turbidity Analysis Report

Name: RECSCHED Number of Lines: 18
Used by Program(s): WAQC130 WAQC140 WAQC150 WAQC170 WAQC180
Description: Record layout for SAF scheduling record

Name: RECSEF Number of Lines: 18
Used by Program(s): ENAC010 MSIS010 MSIS020 OPER010 PWSI010 PWSI070 REGS010 VAEX010 WAQC010 WAQC020 WAQC120 WAQC210
Description: Record description of Standard Error File (SEF)

Name: RECSEL1 Number of Lines: 6
Used by Program(s): MSIS040
Description" Record description of SEL1

Name: RECSEL2 Number of Lines: 5
Used by Program(s): MSIS040
Description: Record description of SEL2

Name: RECSHF Number of Lines: 9
Used by Program(s): ENAC010 MSIS020 MSIS050 OPER010 VAEX010 WAQC120
Description: Record description of Standard Error File (SEF)

Name: RECSHFI Number of Lines: 9
Used by Program(s): MSIS020 MSIS040 MSIS050
Description: Record description of Standard History File (SHF) as input

Name RECSHFPR Number of Lines: 7
Used by Program(s): WAQC120 VAEX010 ENAC010
Description: Record description of Standard History transaction

Name: RECSHFT Number of Lines: 9
Used by Program(s): MSIS020 MSIS050
Description: Reccrd description of Standard History transaction

Name: RECSORT Number of Lines: 7
Used by Program(s): MSIS040
Description: Record description of SORT

Name: RECSRT30 Number of Lines: 7
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Record description of SORT for PWSI030

Name: RECSSPRI Number of Lines: 34
Used by Program(s): SRVY010 SRVY020
Description: Record layouts for SRVY pricrity report file

Name: RECSSSCH Number of Lines: 34
Used by Program(s): SRVY010 SRVY020
Description: Record layouts for SRVY schedule report file

Name: RECSTVIF Number of Lines: 3
Used by Program(s): WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
WAQC061 WAQC070 WAQC080 WAQC090
Description: Record description of Violations File (FIV)
sort record

Name: RECVEF Number of Lines: 30
Used by Program(s): FEDR020 VAEX010 VAEX040
Description: Record description of Variances and Exemptions
File (VEF)

Name: RECVEFCA Number of Lines: 45
Used by Program(s): VAEX010 VAEX030
Description: Record description of Variances and Exemptions
Compliance In Arrears File

Name: RECVEFCS Number of Lines: 46
Used by Program(s): VAEX010 VAEX020
Description: Record description of Variances and Exemptions
Compliance schedules

Name: RECVEFRF Number of Lines: 47
Used by Program(s): VAEX010 VAEX040 VAEX041 VAEX050
Description: Record description of Variances and Exemptions
Report File

Name: RECVIF Number of Lines: 39
Used by Program(s): WAQC120 WAQC125 FEDR020 SRVY010
Description: Record description of Violations File (VIF)

Name: RECVIFIM Number of Lines: 31
Used by Program(s): WAQC040 WAQC041 WAQC050 WAQC051
Description: Record description of Violations Report File
as input

Name: RECVIFIR Number of Lines: 14
Used by Program(s): WAQC037 WAQC090
Description: Record description for Operations Violations
Report File

Name: RECVIPIS Number of Lines: 29
Used by Program(s): WAQC060 WAQC061 WAQC070 WAQC080
Description: Record description of Sampling Violations
Report File

Name: RECVIHR Number of Lines: 7
Used by Program(s): WAQC037 WAQC040 WAQC041 WAQC050 WAQC051
WAQC060 WAQC061 WAQC070 WAQC080 WAQC090
Description: Record description of Violations Report
File Header

Name: RECVIST Number of Lines: 8
Used by Program(s): WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
WAQC061 WAQC070 WAQC080 WAQC090 WAQC110
WAQC111 WAQC112 WAQC113
Description: Record description of Violations File Sort record

Name: RECVIU00 Number of Lines: 5
Used by Program(s): WAQC037 WAQC120
Description: VIF update record layout for transactions 00 & 98

Name: RECVIU01 Number of Lines: 16
Used by Program(s): WAQC037 WAQC120
Description: VIF update record layout for transaction 01

Name: RECVIU02 Number of Lines: 18
Used by Program(s): WAQC037 WAQC120
Description: VIF Update record layout for transaction 02

Name: REGSOCOM Number of Lines: 2
Used by Program(s): REGS010 WAQC032 WAQC033
Description: Object computer for segmented programs

Name: RTNALDEC Number of Lines: 79
Used by Program(s): PWSI020 PWSI030 PWSI040 PWSI050 PWSI060
WAQC010 WAQC011 WAQC040 WAQC041 WAQC050
WAQC051 WAQC100 WAQC110 WAQC111 WAQC112
WAQC113 WAQC125
Description: Routine To position decimal point, used with
WSAINDEC

Name: RTNALIGN Number of Lines: 47
Used by Program(s): VAEX041 VAEX050 WAQC040 WAQC041 WAQC050
WAQC051 WAQC110 WAQC111 WAQC112 WAQC113
WAQC125
Description: Routine to align decimal point, used with WSALIGN

Name: RTNCNVT Number of Lines: 27
Used by Program(s): WAQC031 WAQC034 WAQC035 WAQC036
Description: Routine to convert an MCL and DECIMALS field to a decimal number

Name: RTNDATED Number of Lines: 39
Used by Program(s): ENAC010 ENAC020 FEDR010 MSIS010 MSIS020 MSIS030 MSIS040 MSIS050 OPER010 OPER020 PWSI010 PWSI020 PWSI030 PWSI040 PWSI050 PWSI060 PWSI070 PWSI080 PWSI090 PWSI120 PWSI130 REGS010 REGS020 SRVY010 VAEX010 VAEX040 WAQC010 WAQC011 WAQC020 WAQC025 WAQC100 WAQC120 WAQC125 WAQC130 WAQC210 WAQC220
Description: Routine to validate dates, used with WSDATED

Name: RTNDECLR Number of Lines: 19
Used by Program(s): PWSI010 WAQC010 WAQC032 WAQC033 WAQC034 WAQC035 WAQC036 WAQC120
Description: Routine which sets uses of declaratives with Lab Table

Name: RTNERROR Number of Lines: 110
Used by Program(s): MSIS010 MSIS020 MSIS030 MSIS050
Description: Routine to print processing option errors, uses WSERROR

Name: RTNFRJUL Number of Lines: 63
Used by Program(s): ENAC030 ENAC040 MSIS020 MSIS040 MSIS050 OPER030 PWSI060 PWSI070 PWSI080 PWSI090 REGS020 SRVY020 VAEX010 VAEX020 VAEX030 VAEX040 VAEX041 VAEX050 WAQC010 WAQC011 WAQC031 WAQC032 WAQC033 WAQC034 WAQC035 WAQC036 WAQC040 WAQC041 WAQC050 WAQC051 WAQC060 WAQC061 WAQC070 WAQC080 WAQC090 WAQC110 WAQC111 WAQC112 WAQC113 WAQC125 WAQC130
Description: Routine to convert Julian Date to Calendar Date, uses WSJUL

```
Name: RTNHDR        Number of Lines: 16
Used by Program(s): ENAC010 ENAC030 ENAC040 FEDR010 FEDR020
                    MSIS010 MSIS020 MSIS030 MSIS050 OPER010
                    OPER030 OPER040 PWSI010 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI090 PWSI120
                    PWSI130 REGS010 REGSC20 SRVY010 SRVY020
                    VAEX010 VAEX020 VAEX030 VAEX041 VAEX050
                    WAQC010 WAQC011 WAQC020 WAQC025 WAQC032
                    WAQC033 WAQC034 WAQC035 WAQC036 WAQC040
                    WAQC041 WAQC050 WAQC051 WAQC060 WAQC061
                    WAQC070 WAQC080 WAQC090 WAQC110 WAQC111
                    WAQC112 WAQC113 WAQC120 WAQC125 WAQC130
                    WAQC140 WAQC150 WAQC170 WAQC180 WAQC200
                    WAQC210 WAQC220
Description: Routine to print first three header lines

Name: RTNLAG        Number of Lines: 19
Used by Program(s): VAEX030  VAEX050
Description: Routine to calculate lag in dates, uses WSLAG

Name: RTNLBT        Number of Lines: 245
Used by Program(s): PWSI010 WAQC010 WAQCC32 WAQC033 WAQCC34
                    WAQC036 WAQC120
Description: Routine to determine if a record is on the
             Lab Table (LBT), uses WSLBT

Name: RTNPRINT      Number of Lines: 136
Used by Program(s): ENAC010 ENAC030 FEDR010 OPER010 PWSI030
                    PWSI040 PWSI050 PWSI060 PWSI070 PWSI090
                    PWSI130 REGS010 REGS020 VAEX010 WAQC010
                    WAQC011 WAQC02C WAQCC25 WAQC032 WAQCC33
                    WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
                    WAQC061 WAQC070 WAQC080 WAQC090 WAQC110
                    WAQC111 WAQC112 WAQC113 WAQC120 WAQC150
                    WAQC170 WAQC180 WAQC210 WAQC220
Description: Routines to print standard errors, uses
             WSPRINT or WSPRT

Name: RTNPRT        Number of Lines: 136
Used by Program(s): PWSI010
Description: Routine to print card images and error messages,
              uses WSPRT

Name: RTNPWDEC      Number of Lines: 19
Used by Program(s): ENAC010 ENAC030 OPER010 VAEX010 VAEX040
                    WAQC010 WAQC100 WAQC120 WAQC125
Description: Declarative Section for Public Water Table
             (PWT) use
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Name: RTNPWT Number of Lines: 248
Used by Program(s): ENAC010 ENAC030 OPER010 VAEX010 VAEX040
WAQC010 WAQC100 WAQC120 WAQC125
Description: Routine to determine if an entry is on the
Public Water Table (PWT) uses WSPWT.

Name: RTNSELRP Number of Lines: 303
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI020 PWSI080
VAEX040 WAQC100 WAQC125
Description: Routine to produce selection statistics
report, uses WSSELRP

Name: RTNSLASH Number of Lines: 11
Used by Program(s): ENAC030 ENAC040 FEDR020 OPER030 OPER040
SRVY020 VAEX020 VAEX030 VAEX041 VAEX050
WAQC034 WAQC038 WAQC040 WAQC041 WAQC050
WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
WAQC090 WAQC110 WAQC111 WAQC112 WAQC113
WAQC130 WAQC140 WAQC150 WAQC170 WAQC180
WAQC200
Description: Routine to add slashes to formatted date,
uses WSSLASH.

Name: RTNSORT Number of Lines: 60
Used by Program(s): VAEX020 VAEX030 VAEX041 VAEX050 ENAC010
Description: Routine to sort values of an input vector

Name: RTNSRT Number of Lines: 63
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060 PWSI070
SRVY010 WAQC011 WAQC040 WAQC041 WAQC050
WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
WAQC090 WAQC110 WAQC111 WAQC112 WAQC113
Description: Routine To produce Sort sequence report,
uses WSSRT

Name: RTNSTAT Number of Lines: 83
Used by Program(s): ENAC010 MSIS020 MSIS030 MSIS050 OPER010
PWSI070 REGS010 VAEX010 WAQC010 WAQC020
WAQC120
Description: Routine to print Standard Update Statistics

Name: RTNTOJUL Number of Lines: 33
Used by Program(s): ENAC010 ENAC020 FEDR010 MSIS040 MSIS050
OPER010 OPER020 PWSI010 PWSI020 PWSI080
PWSI090 REGS010 SRVY010 VAEX010 VAEX040
VAEX041 WAQC010 WAQC031 WAQC032 WAQC033
WAQC034 WAQC035 WAQC036 WAQC037 WAQC100
WAQC120 WAQC125 WAQC130 WAQC210 WAQC220
Description: Routine to convert a calandar date to Julian format

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Name: RTNWARN      Number of Lines: 46
Used by Program(s): WAQC120 VAEX010 ENAC010
Description: Routine to print standard Warning Report,
             uses WSWARN

Name: SCOM         Number of Lines:  1
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
                    MSIS050 OPER010 OPER020 OPER030 OPER040
                    OPER050 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
                    PWSI120 PWSI130 REGS010 REGS020 SRVY010
                    SRVY020 VAEX010 VAEX020 VAEX030 VAEX040
                    VAEX041 VAEX050 WAQC010 WAQC011 WAQC020
                    WAQC025 WAQC031 WAQC032 WAQC033 WAQC034
                    WAQC035 WAQC036 WAQC037 WAQC038 WAQC040
                    WAQC041 WAQC050 WAQC051 WAQC060 WAQC061
                    WAQC070 WAQC080 WAQC090 WAQC100 WAQC110
                    WAQC111 WAQC112 WAQC113 WAQC120 WAQC125
                    WAQC130 WAQC140 WAQC150 WAQC170 WAQC180
                    WAQC200 WAQC210 WAQC220
Description: Source Computer statement

Name: SDPSF        Number of Lines: 1
Used by Program(s): WAQC010
Description: Sort Description of Periodic Sample File (PSF)

Name: SDSAFI       Number of Lines: 1
Used by Program(s): WAQC110 WAQC111 WAQC112 WAQC113
Description: SD for SAF

Name: SDVIF        Number of Lines: 1
Used by Program(s): WAQC125
Description: SD for VIF records

Name: SDVIFI       Number of Lines: 1
Used by Program(s): WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
                    WAQC061 WAQC070 WAQC080 WAQC090
Description: Sort description of Violations File (VIF)

Name: SDWKF30      Number of Lines: 1
Used by Program(s): PWSI030
Description: Sort Work record

Name: SDWKF40      Number of Lines: 1
Used by Program(s): PWSI040
Description: Sort work record

Name: SDWKF50      Number of Lines: 1
Used by Program(s): PWSI050
Description: Sort work record
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Name: SD144 Number of Lines: 1
Used by Program(s): PWSI070 PWSI080
Description: Sort work record

Name: SELEA010 Number of Lines: 15
Used by Program(s): ENAC010
Description: SELECT and ASSIGN statements for ENAC010

Name: SELEA020 Number of Lines: 5
Used by Program(s): ENAC020
Description: SELECT and ASSIGN statements for ENAC020

Name: SELEA030 Number of Lines: 8
Used by Program(s): ENAC030
Description: SELECT and ASSIGN statements for ENAC030

Name: SELEA040 Number of Lines: 2
Used by Program(s): ENAC040
Description: SELECT and ASSIGN statements for ENAC040

Name: SELFR010 Number of Lines: 6
Used by Program(s): FEDR010
Description: SELECT and ASSIGN statments for FEDR010

Name: SELFR020 Number of Lines: 6
Used by Program(s): FEDR020
Description: SELECT and ASSIGN statements for FEDR020

Name: SELMS010 Number of Lines: 15
Used by Program(s): MSIS010
Description: SELECT and ASSIGN statements for MSIS010

Name: SELMS020 Number of Lines: 9
Used by Program(s): MSIS020
Description: SELECT and ASSIGN statements for MSIS020

Name: SELMS030 Number of LInes: 22
Used by Program(s): MSIS030
Description: SELECT and ASSIGN statements for MSIS030

Name: SELMS040 Number of Lines: 11
Used by Program(s): MSIS040
Description: SELECT and ASSIGN statements for MSIS040

Name: SELMS050 Number of Lines: 9
Used by Program(s): MSIS050
Description: SELECT and ASSIGN statements for MSIS050

Name: SELOM010 Number of Lines: 15
Used by Program(s): OPER010
Description: SELECT and ASSIGN statements for OPER010

Name: SELOM020 Number of Lines: 7
Used by Program(s): OPER020
Description: SELECT and ASSIGN statements for OPER020

Name: SELOM030 Number of Lines: 2
Used by Program(s): OPER030
Description: SELECT and ASSIGN statements for OPER030

Name: SELOM040 Number of Lines: 2
Used by Program(s): OPER040
Description: SELECT and ASSIGN statements for OPER040

Name: SELCOM050 Number of Lines: 2
Used by Program(s): OPER050
Description: SELECT and ASSIGN statements for OPER050

Name: SELPW010 Number of Lines: 37
Used by Program(s): PWSI010
Description: SELECT and ASSIGN statements for PWSI010

Name: SELPW020 Number of Lines: 9
Used by Program(s): PWSI020
Description: SELECT and ASSIGN statements for PWSI020

Name: SELPW060 Number of Lines: 6
Used by Program(s): PWSI060
Description: SELECT and ASSIGN statements for PWSI060

Name: SELPW070 Number of Lines: 9
Used by Program(s): PWSI070
Description: SELECT and ASSIGN statements for PWSI070

Name: SELPW080 Number of Lines: 7
Used by Program(s): PWSI080
Description: SELECT and ASSIGN statements for PWSI080

Name: SELPW090 Number of Lines: 5
Used by Program(s): PWSI090
Description: SELECT and ASSIGN statements for PWSI090

Name: SELPW120 Number of Lines: 5
Used by Program(s): PWSI120
Description: SELECT and Assign statements for PWSI120

Name: SELPW130 Number of Lines: 6
Used by Program(s): PWSI130
Description: SELECT and ASSIGN statements for PWSI130

Name: SELPW345 Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050
Description: SELECT and ASSIGN statements for PWSI030, 40 50

Name: SELRG010 Number of Lines: 25
Used by Program(s): REGS010
Description: SELECT and ASSIGN statements for REGS010

Name: SELRG020 Number of Lines: 3
Used by Program(s): REGS020
Description: SELECT and ASSIGN statements for REGS020

Name SELVE010 Number of Lines: 27
Used by Program(s): VAEX010
Description: SELECT and ASSIGN statements for VAEX010

Name: SELVE020 Number of Lines: 2
Used by Program(s): VAEX020
Description: SELECT and ASSIGN statements for VAEX020

Name: SELVE030 Number of Lines: 2
Used by Program(s): VAEX030
Description: SELECT and ASSIGN statements for VAEX020

Name: SELVE040 Number of Lines: 9
Used by Program(s): VAEX040
Description: SELECT and ASSIGN statements for VAEX040

Name: SELVE041 Number of Lines: 2
Used by Program(s): VAEX041
Description: SELECT and ASSIGN statements for VAEX041

Name: SELVE050 Number of Lines: 2
Used by Program(s): VAEX050
Description: SELECT and ASSIGN statements for VAEX050

Name: SELWQ010 Number of Lines: 54
Used by Program(s): WAQC010
Description: SELECT and ASSIGN statements for WAQC010

Name: SELWQ020 Number of Lines: 6
Used by Program(s): WAQC020
Description: SELECT and ASSIGN statements for WAQC020

Name: SELWQ025 Number of Lines: 10
Used by Program(s): WAQC025
Description: SELECT and ASSIGN statements for WAQC025

Name: SELWQ031 Number of Lines: 36
Used by Program(s): WAQC031
Description: SELECT and ASSIGN statements for WAQC031

Name: SELWQ032 Number of Lines: 46
Used by Program(s): WAQC032
Description: SELECT and ASSIGN statements for WAQC032

Name: SELWQ033 Number of Lines: 48
Used by Program(s): WAQC033 WAQC035 WAQC036
Description: SELECT and ASSIGN statements for WAQC033

Name: SELWQ034 Number of Lines: 42
Used by Program(s): WAQC034
Description: SELECT and ASSIGN statements for WAQC034

Name: SELWQ035 Number of Lines: 40
Used by Program(s): WAQC035
Description: SELECT and ASSIGN statements for WAQC035

Name: SELWQ036 Number of Lines: 40
Used by Program(s): WAQC036
Description: SELECT and ASSIGN statements for WAQC036

Name: SELWQ037 Number of Lines: 4
Used by Program(s): WAQC037
Description: SELECT and ASSIGN statements for WAQC037

Name: SELWQ038 Number of Lines: 21
Used by Program(s): WAQC038
Description: SELECT and ASSIGN statements for WAQC038

Name: SELWQ040 Number of Lines: 5
Used by Program(s): WAQC040
Description: SELECT and ASSIGN statements for WAQC040

Name: SELWQ041 Number of Lines: 5
Used by Program(s): WAQC041
Description: SELECT and ASSIGN statements for WAQC041

Name: SELWQ050 Number of Lines: 5
Used by Program(s): WAQC050
Description: SELECT and ASSIGN statements for WAQC050

Name: SELWQ051 Number of Lines: 5
Used by Program(s): WAQC051
Description: SELECT and ASSIGN statements for WAQC051

Name: SELWQ060 Number of Lines: 5
Used by Program(s): WAQC060
Description: SELECT and ASSIGN statements for WAQC060

Name: SELWQ061 Number of Lines: 5
Used by Program(s): WAQC061
Description: SELECT and ASSIGN statements for WAQC061

Name: SELWQ070 Number of Lines: 5
Used by Program(s): WAQC070
Description: SELECT and ASSIGN statements for WAQC070

Name: SELWQ080 Number of Lines: 5
Used by Program(s): WAQC080
Description: SELECT and ASSIGN statements for WAQC080

Name: SELWQ090 Number of Lines: 5
Used by Program(s): WAQC090
Description: SELECT and ASSIGN statements for WAQC090

Name: SELWQ110 Number of Lines: 5
Used by Program(s): WAQC110
Description: SELECT and ASSIGN statments for WAQC110

Name: SELWQ111 Number of Lines: 5
Used by Program(s): WAQC111
Description: SELECT and ASSIGN statements for WAQC111

Name: SELWQ112 Number of Lines: 5
Used by Program(s): WAQC112
Description: SELECT and ASSIGN statements for WAQC112

Name: SELWQ113 Number of Lines: 5
Used by Program(s): WAQC113
Description: SELECT and ASSIGN statements for WAQC113

Name: SELWQ120 Number of Lines: 17
Used by Program(s): WAQC120
Description: SELECT and ASSIGN statements for WAQC120

Name: SELWQ125 Number of Lines: 8
Used by Program(s): WAQC125
Description: SELECT and ASSIGN statements for WAQC125

Name: SELWQ130 Number of Lines: 10
Used by Program(s): WAQC130
Description: SELECT and ASSIGN statements for WAQC 130

Name: SELWQ140 Number of Lines: 2
Used by Program(s): WAQC140
Description: SELECT and ASSIGN statements for WAQC140

Name: SELWQ150 Number of Lines: 3
Used by Program(s): WAQC150
Description: SELECT and ASSIGN statements for WAQC150

Name: SELWQ170 Number of Lines: 3
Used by Program(s): WAQC170
Description: SELECT and ASSIGN statements for WAQC170

Name: SELWQ180 Number of Lines: 3
Used by Program(s): WAQC180
Description: SELECT and ASSIGN statements for WAQC180

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Name: SELWQ200     Number of Lines: 3
Used by Program(s): WAQC200
Description: SELECT and ASSIGN statments for WAQC200

Name: SELWQ210     Number of Lines: 17
Used by Program(s): WAQC210
Description: SELECT and ASSIGN statments for WAQC210

Name: SELWQ220     Number of Lines: 5
Used by Program(s): WAQC220
Description: SELECT and ASSIGN statements for WAQC220

Name SPNM          Number of Lines: 1
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
                    MSIS050 OPER010 OPER020 OPER030 OPER040
                    OPER050 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
                    PWSI120 PWSI130 REGS010 REGS020 SRVY010
                    SRVY020 VAEX010 VAEX020 VAEX030 VAEX040
                    VAEX041 VAEX050 WAQC010 WAQC011 WAQC020
                    WAQC025 WAQC031 WAQC032 WAQC033 WAQC034
                    WAQC035 WAQC036 WAQC037 WAQC038 WAQC040
                    WAQC041 WAQC050 WAQC051 WAQC060 WAQC061
                    WAQC070 WAQC080 WAQC090 WAQC100 WAQC110
                    WAQC111 WAQC112 WAQC113 WAQC120 WAQC125
                    WAQC130 WAQC140 WAQC150 WAQC170 WAQC180
                    WAQC200 WAQC210 WAQC220
Description: SPECIAL-NAMES paragraph

Name: WSALIGN      Number of Lines: 17
Used by Program(s): VAEX041 VAEX050 WAQC011 WAQC035 WAQC036
                    WAQC040 WAQC041 WAQC050 WAQC051 WAQC060
                    WAQC061 WAQC070 WAQC080 WAQC090 WAQC110
                    WAQC111 WAQC112 WAQC113 WAQC125
Description: Working storage for RTNALIGN

Name: WSALNDEC     Number of Lines: 28
Used by Program(s): PWSI020 PWSI030 PWSI040 PWSI050 PWSI060
                    WAQC010 WAQC011 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC100 WAQC110 WAQC111 WAQC112
                    WAQC113 WAQC125
Description: Working storage for RTNALDEC

Name: WISBNRY      Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for binary digit redefined
             alphanumeric
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Name: WSCNVRT Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for converting to binary

Name: WSCNVT Number of Lines: 5
Used by Program(s): WAQC031 WAQC034 WAQC035 WAQC036
Description: Working storage for converting to binary

Name: WSCTR30 Number of Lines: 23
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for sort counters

Name: WSCVTPWS Number of Lines: 83
Used by Program(s): PWSI010
Description: Working storage for PWSI CVT

Name: WSDATED Number of Lines: 35
Used by Program(s): ENAC010 ENAC020 FEDR010 MSIS010 MSIS020
MSIS030 MSIS040 MSIS050 OPER010 OPER020
PWSI010 PWSI020 PWSI030 PWSI040 PWSI050
PWSI060 PWSI070 PWSI080 PWSI090 PWSI120
PWSI130 REGS010 REGS020 SRVY010 VAEX010
VAEX040 WAQC010 WAQC011 WAQC020 WAQC025
WAQC035 WAQC036 WAQC100 WAQC120 WAQC125
WAQC130 WAQC210 WAQC220
Description: Working storage for RTNDATED

Name: WSDETAR Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for DET array

Name: WSERROR Number of Lines: 39
Used by Program(s): MSIS010 MSIS020 MSIS030 MSIS050
Description: Working storage for RTNERROR

Name: WSERRREC Number of Lines: 13
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI010 PWSI020
PWSI030 PWSI040 PWSI050 PWSI060 PWSI080
SRVY010 VAEX040 WAQC100 WAQC125
Description: Working storage for error message lines

Name: WSFLTTL Number of Lines: 32
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for Public Water System report
titles

Name: WSHDARY Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for 16 position array

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Name: WSHDR          Number of Lines: 39
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    FEDR020 MSIS010 MSIS020 MSIS030 MSIS040
                    MSIS050 OPER010 OPER020 OPER030 OPER040
                    PWSI010 PWSI020 PWSI030 PWSI040 PWSI050
                    PWSI060 PWSI070 PWSI080 PWSI090 PWSI120
                    PWSI130 REGS010 REGS020 SRVY010 SRVY020
                    VAEX010 VAEX020 VAEX030 VAEX040 VAEX041
                    VAEX050 WAQC010 WAQC011 WAQC020 WAQC025
                    WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC040 WAQC041 WAQC050 WAQC051
                    WAQC060 WAQC061 WAQC070 WAQC080 WAQC090
                    WAQC100 WAQC110 WAQC111 WAQC112 WAQC113
                    WAQC120 WAQC125 WAQC130 WAQC140 WAQC150
                    WAQC170 WAQC180 WAQC200 WAQC210 WAQC220
Description: Working storage for RTNHDR

Name: WSHDRVAL       Number of Lines: 49
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI020 PWSI080
                    VAEX040 WAQC100 WAQC125
Description: Working storage for RTNSELRF

Name: WSJUL          Number of Lines: 105
Used by Program(s): ENAC010 ENAC020 ENAC030 ENAC040 FEDR010
                    MSIS020 MSIS040 MSIS050 OPER010 OPER020
                    OPER030 PWSI010 PWSI020 PWSI060 PWSI070
                    PWSI080 PWSI090 PWSI120 REGS010 REGS020
                    SRVY010 SRVY020 VAEX010 VAEX020 VAEX030
                    VAEX040 VAEX041 VAEX050 WAQC010 WAQC011
                    WAQC031 WAQC032 WAQC033 WAQC034 WAQC035
                    WAQC036 WAQC037 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
                    WAQC090 WAQC100 WAQC110 WAQC111 WAQC112
                    WAQC113 WAQC120 WAQC125 WAQC130 WAQC210
                    WAQC220
Description: Working storage for TRNFRJUI and RTNTOJUI

Name: WSLAG          Number of Lines: 13
Used by Program(s): VAEX030 VAEX050
Description: Working storage for TRNLAG

Name: WSLBT          Number of Lines: 48
Used by Program(s): PWSI010 WAQC010 WAQC032 WAQC033 WAQC034
                    WAQC035 WAQC036 WAQC120
Description: Working storage for RTNLBT

Name: WSPHONE        Number of Lines: 4
Used by Program(s): OPER030 OPER040
Description: Working storage for splitting phone number
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Name: WSPRCERR     Number of Lines: 13
Used by Program(s): ENAC010 ENAC020 FEDR010 MSIS040 OPER010
                    OPER020 PWSI010 PWSI020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 PWSI090
                    PWSI120 PWSI130 REGS020 SRVY010 VAEX010
                    VAEX040 WAQC011 WAQC020 WAQC025 WAQC100
                    WAQC120  WAQC125 WAQC130
Description: Working storage for PROC error messages

Name: WSPRINT      Number of Lines: 56
Used by Program(s): ENAC030 FEDR010 OPER010 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI090 PWSI130
                    VAEX040 WAQC020 WAQC025 WAQC036 WAQC040
                    WAQC041 WAQC050 WAQC051 WAQC060 WAQC061
                    WAQC070 WAQC080 WAQC090 WAQC120 WAQC150
                    WAQC170 WAQC180 WAQC220
Description: Working storage for RTNPRINT

Name: WSPRT Number of Lines: 59
Used by Program(s): ENAC010 PWSI010 REGS010 REGS020 VAEX010
                    WAQC010 WAQC011 WAQC032 WAQC033 WAQC034
                    WAQC100 WAQC111 WAQC112 WAQC113 WAQC125
                    WAQC210
Description: Working storage for RTNPRT

Name: WSPWFAR      Number of Lines: 135
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for Public Water File mnemonic

Name: WSPWFWK      Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for PWF-type file

Name: WSPWT        Number of Lines: 46
Used by Program(s): ENAC010 ENAC030 OPER010 VAEX010 VAEX040
                    WAQC010 WAQC100 WAQC120 WAQC125
Description: Working storage for RTNPWT

Name: WSRECDET     Number of Lines: 16
Used by Program(s): ENAC020 MSIS020 MSIS040 MSIS050 OPER020
                    PWSI070 PWSI080 SRVY010 VAEX040
Description: Working storage for Data Element Table (DET)

Name: WSRSTERR     Number of Lines: 7
Used by Program(s): WAQC150 WAQC170 WAQC180
Description: Working storage for RESTART error messages

Name: WSSELERR     Number of Lines: 37
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI020 PWSI080
                    VAEX040 WAQC100 WAQC125
Description: Working storage for SEL1 and SEL2 error messages
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Name: WSSELRP      Number of Lines: 166
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI020 PWSI080
                    VAEX040 WAQC100 WAQC125
Description: Working storage for RTNSELRP

Name: WSSELTAB     Number of Lines: 49
used by Program(s): ENAC020 MSIS040 OPER020 PWSI020 PWSI080
                    VAEX040 WAQC100 WAQC125
Description: Working storage for tables of Selection programs

Name: WSSKYBS      Number of Lines: 5
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for sorting vector

Name: WSSLASH      Number of Lines: 14
Used by Program(s): ENAC030 ENAC040 FEDR020 OPER030 OPER040
                    SRVY020 VAEX020 VAEX030 VAEX041 VAEX050
                    WAQC011 WAQC034 WAQC038 WAQC040 WAQC041
                    WAQC050 WAQC051 WAQC060 WAQC061 WAQC070
                    WAQC080 WAQC090 WAQC110 WAQC111 WAQC112
                    WAQC113 WAQC130 WAQC140 WAQC150 WAQC170
                    WAQC180 WAQC200
Description: Working storage for RTNSLASH

Name: WSSORT       Number of Lines: 16
Used by Program(s): VAEX020 VAEX030 VAEX041 VAEX050 ENAC010
Description: Working storage for RTNSORT subscripts

Name: WSSRT        Number of Lines: 46
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060 PWSI070
                    SRVY010 WAQC011 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
                    WAQC090 WAQC110 WAQC111 WAQC112 WAQC113
Description: Working storage for RTNSRT

Name: WSSRTERR     Number of Lines: 22
Used by Program(s): ENAC020 MSIS040 OPER020 PWSI030 PWSI040
                    PWSI050 PWSI060 PWSI070 PWSI080 SRVY010
                    VAEX040 WAQC011 WAQC040 WAQC041 WAQC050
                    WAQC051 WAQC060 WAQC061 WAQC070 WAQC080
                    WAQC090 WAQC110 WAQC111 WAQC112 WAQC113
Description: Working storage for SORT error messages

Name: WSSRTKY      Number of Lines: 10
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for sort key data from SORT records

Name: WSSS030      Number of Lines: 13
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Working storage for PWFI reports
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Name: WSSW030 Number of Lines: 23
Used by Program(s): PWSI030 PWSI040 PWSI050
Description: Working storage for switches in PWFI reports

Name: WSSW060 Number of Lines: 33
Used by Program(s): PWSI060
Description: Working storage for switches in Comprehensive List

Name: WSTRKCAP Number of Lines: 5
Used by Program(s): WAQC210
Description: Working storage for Lab Table track capacity

Name: WSTRKPWT Number of Lines: 3
Used by Program(s): PWSI130
Description: Working storage for PWT track capacity

Name: WSWARN Number of Lines: 62
Used by Program(s): WAQC120 VAEX010 ENAC010
Description: Working storage for RTNWARN

Name: WS9TOX Number of Lines: 4
Used by Program(s): PWSI030 PWSI040 PWSI050 PWSI060
Description: Intermediate hold area in working storage

Appendix - MSIS.PROCLIB Module Descriptions

All library members are arranged alphabetically within subsystem according to the following sequence.

Public Water System Inventory (PWSI)
Regulations (REGS)
Water Quality Compliance (WAQC)
Federal Reporting (FEDR)
Standard Processing (MSIS)
Variances and Exemptions (VAEX)
Enforcement Actions (ENAC)
Sanitary Survey (SRVY)
Operator and Mailing (OPER)

PROC Library Contents

Name: PWSICONV Number of Lines: 25
Description: Convert National Inventory to MSIS job stream

Name: PWSIPHFP Number of Lines: 28
Description: Purge Public History File (PHF) job stream

Name: PWSIPWTC Number of Lines: 37
Description: Create Public Water Table (PWT) job stream

Name: PWSISELH Number of Lines: 61
Description: Select from the Public History File (PHF) job stream

Name: PWSISELT Number of Lines: 273
Description: Select from the Public Water File (PWF) job stream

Name: PWSIUPD1 Number of Lines: 242
Description: Update the Public Water File (PWF) job stream

Name: PWSIUPD2 Number of Lines: 214
Description: Create the reports resulting from the update of the PWF (PWSIUPD1)

Name: REGSCRET Number of Lines: 134
Description: Create and list the Regulations File (RGF) job stream

Name: REGSREPT Number of Lines: 19
Description: List the Regulations File (RGF) job stream

Name: WAQCCOM1 Number of Lines: 347
Description: Create various types of Violations Report job stream

Name: WAQCCOM2 Number of Lines: 323
Description: Determine the compliance for inorganic and organic sample data job stream

Name: WAQCCOM3 Number of Lines: 283
Description: Create four types of Violations Warnings Report job stream

Name: WAQCCOM4 Number of Lines: 189
Description: Edit and print operation report violations, merge various compliance files, and sort Periodic Sample File (PSF) job stream

Name: WAQCLBTC Number of Lines: 80
Description: Create the Laboratory Table (LBT) job stream

Name: WAQCPSFU Number of Lines: 130
Description: Update the Periodic Sample File (PSF) job stream

Name: WAQCSAFD Number of Lines: 76
Description: Delete from the Sample Analysis File (SAF) job stream

Name: WAQCSAFP Number of Lines: 28
Description: Purge the Sample Analysis File (SAF) job stream

Name: WAQCSAFS Number of Lines: 261
Description: Select from the Sample Analysis File (SAF) job stream

Name: WAQCSCHD Number of Lines: 251
Description: Sample Scheduling job stream

Name: WAQCVIFS Number of Lines: 58
Description: Select from the Violations File (VIF) job stream

Name: WAQCVIFU Number of Lines: 154
Description: Update the Violation File (VIF)

Name: FEDRREPT Number of Lines: 57
Description: Create the modified Public Water File (PWF) and the Deviations File (DVF) job stream

Name: MSISCRET Number of Lines: 109
Description: Create the Error Message Table (EMT), Code Value Table (CVT) and Data Element Table (DET) job stream

Name: MSISPURG Number of Lines: 32
Description: Purge the Standard History File (SHF) job stream

Name: MSISSELT Number of Lines: 66
Description: Select from the Standard History File (SHF) job stream

Name: VAEXSELT Number of Lines: 111
Description: Select from the Variances and Exemptions File (VEF) job stream

Name: VAEXUPDT Number of Lines: 261
Description: Update the Variances and Exemptions File (VEF) job stream

Name: ENACSELT Number of Lines: 113
Description: Select from the Enforcement Actions File (EAF) job stream

Name: ENACUPDT Number of Lines: 175
Description: Update the Enforcement Actions File (EAF) job stream

Name: SRVYREPT Number of Lines: 222
Description: Schedule Sanitary Surveys job stream

Name: OPERSELT Number of Lines: 189
Description: Select from the Operator and Mailing File (OMF) job stream

Name: OPERUPDT Number of Lines: 246
Description: Update the Operator and Mailing File (OMF) job stream

Name: SORT01 Number of Lines: 2
Description: Sort control cards

Name: SORT02 Number of Lines: 2
Description: Sort control cards

Name: SORT03 Number of Lines: 2
Description: Sort control cards

Name: Sort04 Number of Lines: 2
Description: Sort Control Cards

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Name: SORT05       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT06       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT07       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT08       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT09       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT10       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT11       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT12       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT13       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT14       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT15       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT16       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT17       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT18       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT19       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT20       Number of Lines:  2
Description: Scrt Control Cards

Name: SORT21       Number of Lines:  2
Description: Scrt Control Cards
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Name: SORT22        Number of Lines:  2
Description: Sort Control Cards

Name: SORT23        Number of Lines:  2
Description: Sort Control Cards

Name: SORT24        Number of Lines:  2
Description: Sort Control Cards
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